REMARKS

Claims 1 and 7 are pending in the present application. Claims 5-6 are withdrawn from consideration.

Rejections under 35 USC §103(a)

Claims 1 and 7 were rejected under 35 U.S.C. 103(a) as being obvious over WO 01/18276 A1 in view of JP 11-286770 A as stated in the Office action dated January 5, 2009.

Responding to Applicants' previous response, the Examiner alleged as follows:

> First, the applicant argues that the examiner applies inherency to a combination of prior art. In response, the examiner notes as stated clearly in the Office action dated January 5, 2009, Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01118276 A1 in view of JP 11-286770 A. The rejection was not under 35 U.S.C. 102/103 as asserted by the applicant. The combination of the prior references as the ground of rejection is believed to be proper and is maintained. The yield strength of the worked Mo alloy material with the Mo nitride surface layer of Takada et al. ('368) in view of JP ('770 A) would be expected by one of skill in the art to be higher than that of the worked Mo alloy material without the Mo nitride surface layer because the Abstract of JP ('770 A) discloses that a Mo nitride surface layer formed by a nitriding treatment would increase the mechanical strength and hardness of a Mo based alloy.

(Office Action, page 3, lines 1-12). Thus, the Examiner maintains that the rejection is under 35 U.S.C. 103(a) rather than that under 35 U.S.C. 102/103. However, Applicants do not allege that the rejection is 35 U.S.C. 102/103 rejection, but they allege the problems of the Examiner's allegation of inherency in obviousness rejection under 35 U.S.C. 103(a) under the present situation. Regarding inherency, the MPEP explains as follows:

> IV. EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY
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> The fact that a certain result or characteristic **may occur** or be present in the prior art **is not sufficient to establish the inherency** of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (**reversed rejection because inherency was based on what would result** due to optimization of conditions, **not what was necessarily present in the prior art**); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is **necessarily present in the thing described in the reference**, and that it would be so recognized by persons of ordinary skill. **Inherency, however, may not be established by probabilities or possibilities**. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) . . . .

(MPEP 2112). Thus, inherency applies only when the characteristic is necessarily present in the prior art even though the prior art is silent as to the inherent characteristic. Neither product disclosed in Takada et al. ('368) nor in JP ('770 A) appears to be identical to the presently claimed material. The Examiner himself recognizes the difference and, therefore, alleges obviousness based on the combination of Takada et al. ('368) nor JP ('770 A). Also, the Examiner admits that Takada et al. ('368) does not disclose that the worked Mo alloy material comprises a Mo nitride layer at the surface of the worked Mo alloy material as claimed. Also, JP ('770 A) has been cited for allegedly disclosing a Mo alloy with a Mo nitride layer having a thickness of 0.5 to 10 microns at the surface and the Mo nitride at the surface comprising gamma-Mo_2N, beta-Mo_2N and delta-MoN. **The Examiner's alleged inherency is imaginary, but is not necessarily present in the prior art.**

It is well established that, even if a combination appears to be obvious, the combination can be patentable where there is significant unexpected result. If inherency is applicable against a combination of prior art references, even such unexpected results would be inherent in the imaginary combination. Thus, the rejection based on application of inherency to an imaginary combination of prior art references is in appropriate.

The Examiner further alleged as follows:

> Second, the applicant argues that the instant invention shows unexpected results compared with Takada et al. ('368) in terms of yield and maximum strengths. In response, the examiner notes that **there is no yield strength and/or maximum strength values recited in the instant claims 1 and 7**; and that the applicant has not compared the unexpected results from the instant invention with those from the prior art.

(Office Action, page 3, lines 13-17). It appears that the Examiner alleges that Applicant should not allege unexpected results unless the unexpected results are recited in the claim. However, claim is not supposed to recite such results. Claims directed to a product are supposed to recite the structural features or material features. Results and advantages of the invention would be no more limiting than the purpose or intended use of the invention.

The present invention shows unexpected results compared with Takada et al. ('368). There is no reasonable basis that improvement of the strength of the material is expected. As shown in Table 1 in the present specification, both yield strength and maximum strength are significantly improved by the external nitriding. It was not expected for a person having ordinary skill in the art that there is correlationship between the yield strength of the Mo alloy worked material and the thickness of the thin molybdenum nitride surface layer formed on the Mo alloy.

The thickness of molybdenum nitride increases with the heated temperature. It would be preferable to increase the layer thickness in view of corrosion resistance. However, the present inventors found that toughness was reduced with the increase in layer thickness. Also, the present inventors found that thickness of molybdenum nitride layer should be 3 μm or less.

Moreover, as shown in Fig. 3, the worked material of the present invention exhibits high corrosion resistance.

The disclosure of the present application proves that a worked molybdenum-alloy material subjected to nitriding of the present invention had very high strength in addition to high corrosion resistance.

For at least these reasons, claims 1 and 7 patentably distinguish over Takada et al. ('368) and JP ('770A).

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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